

Procurement Reference No. EV 03-0055-D

Task Assignment Scope of Work

Task D: Narrative Bottom Deposits/Clean Sediment Standard Implementation Procedures

1. Task Assignment

- 1.1 This Task Assignment is for professional environmental consulting services to assist the Department in developing detailed procedures for implementing Arizona's narrative bottom deposits/clean sediment standard at R18-11-108(A)(1). The document must include procedures specifically identifying objective bases for determining violations of R18-11-108(A)(1), conducting water quality assessments using the narrative standard, identifying surface waters that are impaired because of violations of the narrative/clean sediment standard, implementing the narrative water quality standard in National Pollutant Discharge Elimination System permits and Army Corps of Engineer's §404 permits, and implementing the narrative standard through best management practices for nonpoint source pollution control. A detailed set of implementation procedures are necessary to ensure the: 1) the requirements of the narrative water quality standards are effectively met; and 2) surface water quality is adequately protected. ADEQ is seeking a Contractor to provide research, policy analysis, technical support, and technical writing services.
- 1.2 ADEQ has previously released Task Assignments for the development of implementation procedures to the State's Antidegradation Rule (Task A), the Narrative Toxics Standard (Task B) and the Narrative Nutrient Standard (Task C). Offerors may submit TAOs for any or all of the Tasks.

2. Regulatory Authority

- 2.1 A.R.S. §49-202(A) designates ADEQ as the state agency for all purposes of the Clean Water Act. As the state agency responsible for implementing the Clean Water Act in Arizona, ADEQ has a duty to adopt water quality standards for Arizona's rivers, streams, and lakes.
- 2.2 Water quality standards define the water quality standards of a water body or a portion of a water body by designating the use or uses to be made of the water, by setting water quality criteria necessary to protect the designated uses, and by preventing degradation of water quality. ADEQ has adopted, by rule, numeric and narrative water quality standards for Arizona's surface waters. Narrative water quality standards are statements that describe a desired water quality condition, such as the various "free from" statements found in the Arizona Administrative Code at R18-11-108. This rule includes a narrative "bottom deposits/clean sediment standard" at R18-11-108(A)(1). The narrative bottom deposits/clean sediment standard states:
- 2.2.1 A surface water shall be free from pollutants in amounts or combinations that.....*settle to form bottom deposits/clean sediment that inhibit or prohibit the habitation, growth, or propagation of aquatic life.*
- 2.2.2 This narrative bottom deposits/clean sediment standard is intended to prevent excessive sedimentation in surface waters that harms aquatic life. Excessive sediment deposited on a stream bottom can choke spawning gravels, impair fish food sources, fill in rearing pools, and reduce habitat complexity in the stream channel. Excessive sediment which blankets the bottom of surface waters may damage benthic macroinvertebrate populations and reduce biodiversity. For example, bottom deposits/clean sediment can cause imbalances in stream biota as biota that are sensitive to excessive

sediment disappear and benthic organisms that can tolerate increased levels of sediment (e.g., worm populations) increase.

3. Legal Requirements to Develop Implementation Procedures

Recently-enacted state law requires ADEQ to develop implementation procedures for narrative water quality standards before they can be used for §305(b) water quality assessment or §303(d) listing purposes. A.R.S. §49-232(F) requires ADEQ to adopt implementation procedures for each narrative standard that specifically identify the objective bases for determining that a violation of the narrative standard exists. State law requires that the availability of the implementation procedures be publicly noticed and that the public be given an opportunity to comment on the procedures. Finally, no Total Maximum Daily Load (TMDL) analysis can be prepared that is designed to achieve compliance with a narrative water quality standard until implementation procedures are adopted by ADEQ.

4. History of narrative bottom deposit standard implementation procedures

ADEQ prepared *draft Narrative Bottom Deposit Standard Implementation Guidelines for Arizona* during the development of the Impaired Water Identification Rule (A.A.C. Title 18, Article 11, Chapter 6). These guidelines [See Attachments] were discussed during several stakeholder meetings but were never put to formal public review nor were they adopted by ADEQ. This document provides background on the agency's early efforts to develop guidance using the biocriteria program as a basis for determining the health of a surface water. Sections 5 through 10, below, provide guidance as to the comprehensive nature of the implementation procedures that are to be developed under this task assignment.

5. Identifying an Excessive Sedimentation Problem

- 5.1 The Contractor must include problem identification procedures to implement the narrative bottom deposits/clean sediment standard. The implementation procedures must describe tools or processes that ADEQ staff can use in the field to practically and objectively identify surface waters with aquatic life impairments due to excessive sedimentation.
- 5.2 The Contractor will be required to identify measurable indicators and pollutant values that can be used to evaluate attainment of the narrative bottom deposits/clean sediment standard. The narrative bottom deposits/clean sediment standard must be interpreted and translated into objective indicators that ADEQ can use to determine compliance with the narrative bottom deposits/clean sediment standard. Potential indicators may include:
 - a. Substrate indicators (e.g., cobble embeddedness, pebble counts, fine sediment accumulation in pools).
 - b. Stream channel condition indicators (pool / riffle ratios, sinuosity, width / depth ratios, stream channel stability, bank erosion hazards)
 - c. Upland indicators (riparian assessments, erosion rates)
 - d. Water column indicators (e.g. turbidity, total suspended solids concentrations, suspended sediment concentration, bedload)
 - e. Biological indicators: (alterations in benthic macroinvertebrate communities)
- 5.3 The Contractor may recommend multiple indicators or a matrix approach. The wide-ranging effects

of increased sediment loading in surface waters on aquatic life suggest that there may be an equally broad range of techniques that can be used to assess the quantity and impact of increased sediment loads in a surface water and determine whether aquatic life is adversely affected. The sediment transport and fate processes that cause adverse impacts on aquatic life are rarely simple. Sediment fate and transport processes in surface waters vary substantially over time and space. The recommended indicators and analytical tools must take into account the temporal and spatial variability associated with sediment transport and delivery in surface waters.

- 5.4 Procedures for determining when the narrative bottom deposit standard is violated. A required element of the implementation procedures is the identification of objective or measurable indicators of excessive sedimentation that ADEQ can use to determine compliance with the narrative “bottom deposits/clean sediment” standard. It is unlikely that “one size fits all” criteria can be developed for determining compliance with the narrative bottom deposits/clean sediment standard. The implementation procedures to determine compliance must take into account site-specific factors, temporal and spatial variability, and the uncertainty inherent in sediment analyses.

- 5.5 Determining the appropriate scale of a narrative bottom deposits/clean sediment standard violation

Excessive sedimentation can occur on a variety of scales, e.g. at the individual stream reach level to the watershed scale. The implementation procedures document must include procedures for determining the appropriate scale of a narrative bottom deposits/clean sediment standards violation. Rapid techniques for evaluating sediment transport and fate are needed to determine how sediment moves through natural surface water systems, how much sediment is left behind, and under what conditions sediments are deposited in amounts or concentrations that cause adverse impacts to aquatic life. ADEQ needs rapid and practical tools for evaluating the extent and scope of an excessive sedimentation problem.

6. Determining Natural Background Levels of Sedimentation

- 6.1 Sediment is created by the weathering of host rock and delivered to stream channels and lakes through various erosional processes, including sheetwash, gully and rill erosion, wind, landslides, stream channel and bank erosion, and channel disturbances. Because erosion is a natural process and some sediment is needed to maintain healthy stream systems, it is necessary to evaluate the degree to which sediment discharge in a particular watershed exceeds natural rates and patterns. The analysis of natural background can be complicated because sedimentation processes may be highly variable from year to year.
- 6.2 The Contractor will be required to develop procedures for analyzing natural background levels of sediment discharge. The implementation procedures must address how to compare existing sediment loads to natural or background conditions.

7. Narrative Bottom Deposits/Clean Sediment Standard and the §305(b) Water Quality Assessment

The implementation procedures document must cover procedures for how the narrative bottom deposits/clean sediment standard will be used in the water quality assessment process. §305(b) of the Clean Water Act requires that ADEQ report on general water quality conditions of Arizona’s rivers, streams, lakes and reservoirs and identify waters that are not supporting their designated uses based on numeric and narrative water quality standards, including the narrative bottom deposits/clean

sediment standard. The document must include procedures that specifically identify the objective bases for determining whether a violation of the narrative bottom deposits/clean sediment standard exists. ADEQ is further required by state law, A.R.S. §49-232, to consider only reasonably current credible and scientifically defensible data when making an assessment of whether narrative standards are met. The implementation procedures must be consistent with these credible data requirements.

8. §303(d) Listings of Impaired Waters Based on Violations of the Narrative Bottom Deposits/Clean Sediment Standard

The implementation procedures document must include procedures for how the narrative bottom deposits/clean sediment standard will be used in the §303(d) listing process. §303(d) of the Clean Water Act requires states to identify and list surface waters that are water quality limited. “Water quality limited waters” are surface waters that have been assessed by ADEQ as having impaired water quality that require more than existing technology and permit controls to achieve or maintain water quality standards, including narrative standards. §303(d) requires that impaired waters be identified and listed and prioritized for completion of a total maximum daily load [TMDL] analyses. The implementation procedures document must include specific procedures for identifying surface waters that are impaired because of violations of the narrative bottom deposits/clean sediment standard. Again, the implementation procedures must be fully consistent with the credible data requirements prescribed in A.R.S. §49-232 that must be satisfied before listing a surface water under §303(d) because of violations of the narrative bottom deposits/clean sediment narrative standard.

9. Implementation of the Narrative Bottom Deposits/Clean Sediment Standard Through the Arizona Pollutant Discharge Elimination System Permit Program

9.1 The Arizona Pollutant Discharge Elimination System [AZPDES] permit program regulates the point source discharge of pollutants to Arizona’s surface waters. The AZPDES permit program is ADEQ’s most important regulatory program for controlling the point source discharge of pollutants, including sediment, to surface waters and for effectively implementing the narrative bottom deposits/clean sediment standard.

9.2 Under current NPDES permitting regulations, ADEQ must include water quality-based effluent limitations [WQBELs] to control the discharge of sediment from a point source where ADEQ determines that a point source discharge will cause, has a reasonable potential to cause, or contributes to an excursion above any state-adopted water quality standard, including the narrative bottom deposits/clean sediment standard. Thus, WQBELs may be established in AZPDES permits to control the discharge of sediment to surface waters.

9.3 The Contractor shall develop implementation procedures for how to translate the narrative bottom deposit standard into appropriate AZPDES permit discharge limitations to regulate sediment discharges.

10. Implementation of Narrative Bottom Deposits/Clean Sediment Standard through §401 Certification of §404 Dredge and Fill Permits and other federally-issued permits

Under § 401 of the Clean Water Act, states may grant or deny certification for a federally permitted or licensed activity that results in a discharge to the waters of the United States. The decision to grant or deny water quality certification is based on the state’s determination of whether the proposed

activity will comply with certain requirements of the Clean Water Act, including § 303 of the Act. States adopt surface water quality standards under § 303 of the Clean Water Act, including narrative water quality standards like the narrative bottom deposits/clean sediment standard. If a state grants water quality certification to an applicant for a federal permit or license, it is in effect saying that the proposed activity will comply with state-adopted surface water quality standards. If a state denies §401 certification, the federal permitting or licensing agency is prohibited from issuing the permit or license. While ADEQ has adopted surface water quality standards, ADEQ currently does not have state regulations or guidelines for implementing § 401 water quality certifications. The contractor must develop procedures for evaluating activities regulated under individual § 404 dredge and fill permits for compliance with the narrative bottom deposits/clean sediment standard for purposes of water quality certification under §401 of the Clean Water Act.

11. Public Participation

Each set of implementation procedures must be publicly noticed and the public given an opportunity to comment. ADEQ will conduct a stakeholder process to develop the implementation procedures. ADEQ will hold meetings to take public comment on draft implementation procedure documents. The Contractor will be required to participate in the stakeholder process and the public meetings to provide explanations of technical issues contained in the implementation procedures. The Contractor may be asked to respond to public comments and questions received during the public participation process relating to technical aspects of the implementation procedures and to assist ADEQ in the development of responsiveness summaries.

12. Submittals / Deliverables

The final deliverable for each Task is a document containing specific implementation procedures. In addition to hard copies of all implementation procedures documents, the Contractor shall provide final deliverables in electronic format compatible with the current ADEQ word processing software (currently Wordperfect 8.0). Note: ADEQ is planning on converting to Microsoft Office word processing software by late FY03. If or until that happens, final products must be submitted in Wordperfect 8.0.

13. Administrative Requirements

- 13.1 Contractor shall provide support to ADEQ in the stakeholder and public meetings, as required, and in responding to public comments, as needed. The timeframe for this work is yet to be determined.
- 13.2 Deliverables, technical correspondence and reports from the Contractor may be sent by express mail, or by fax with the original sent by regular mail, or hand delivered to ADEQ at the following address:

Steve Pawlowski, Project Manager
Water Quality Division
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, Arizona 85007
Phone: (602) 771-4219
pawlowski.steve@ev.state.az.us

- 13.3 Correspondence to the Contract Officer shall be sent in the same manner as above to the following address:

Linda Wright, Contract Officer
Contracts and Procurement
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, Arizona 85007
Phone: (602) 771-4711
wright.linda@ev.state.az.us

14. Task Assignment Offers (TAO)

- 14.1 Task Assignment Offers shall be prepared as described as described in the TMDL Development RFP's Special Terms and Conditions. Resumes need not be submitted with the TAO.
- 14.2 Please submit any questions regarding this TASOW in writing to the Contract Officer by December 5, 2002 by noon.
- 14.3 Offerors shall submit one original and two copies of the Task Assignment Offer. Offers shall be due at ADEQ Procurement, First Floor Lobby, 1110 W. Washington Street, Phoenix, Arizona, on **December 13, 2002 at 3:00 p.m.** Offers must be in the actual possession of ADEQ by the time and date above. Late offers will not be considered.
- 14.3.1 **Task Assignment Offers must be submitted in a sealed package with the Procurement Reference Number and the Offeror's name and address clearly indicated on the package.**
- 14.4 Evaluation of Task Assignment Offers: An initial evaluation of TAOs will be made on Adequacy of Staff Resources. Contractors must provide staffing levels that are adequate to meet the requirements and timelines of the TASOW. ADEQ will further evaluate those TAOs that meet this requirement based on the factors below, listed in order of importance:
- 14.4.1 Experience, Expertise, and Reliability in Tasks related to policy analysis and development, technical report writing, and the implementation of surface water quality standards, including narrative toxic standards;
- 14.4.2 Method of Approach to the TASOW; and
- 14.4.3 Overall Cost.

References

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**Timeline for Development of
Task D: Narrative Bottom Deposit/Clean Sediment
Standard Implementation Procedures**

Deliverable X = Deliverable		FY' 2003											FY' 2004						Due Date
		J	F	M	A	M	J	J	A	S	O	N	Month D J F M A M J						
1	() Kickoff Stakeholder Meeting																		December, 2002
2	() Stakeholder Meetings	.....				X													03/31/03
3	() Draft Procedures Document					X													04/30/03
4	() Stakeholder Meeting						X												05/31/03
5	() Final Procedures Document							X											07/31/03
6	() Stakeholder Meeting								X										08/15/03
7	() Public Review/Public Meetings								.....	X									09/30/03
8	() Stakeholder Meeting										X								10/15/03
9	() Rulemaking Process										.....	.....	.....	.....	X				04/30/04